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Original Research Article

Assessment of Breastfeeding Practices and Socio-Demographic Correlates among Mothers: A Cross-Sectional Analysis

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Abstract

Background: Breastfeeding is a cornerstone of infant nutrition and survival, yet its optimal practices remain suboptimal in many regions. Understanding breastfeeding behavior and its determinants is essential to design effective interventions.

Objectives: To assess breastfeeding practices among mothers and to identify socio-demographic factors influencing these practices in a tertiary care hospital setting.

Methods: A cross-sectional study was conducted among 390 mothers of infants aged 0–12 months using a pre-tested, semi-structured questionnaire. Data on breastfeeding initiation, exclusivity, colostrum feeding, and socio-demographic characteristics were collected and analyzed using descriptive and inferential statistics.

Results: Early initiation of breastfeeding within one hour of birth was practiced by 57.9% of mothers, and 64.6% practiced exclusive breastfeeding for six months. Colostrum feeding was reported by 87.2%, while 30.3% gave prelacteal feeds. Maternal education, antenatal counseling, and type of family showed significant associations with optimal breastfeeding practices ($p < 0.05$). Although 80% had good knowledge and 61.5% a positive attitude toward breastfeeding, practice gaps were noted.

Conclusion: Breastfeeding practices were satisfactory but below desired national and global targets. Socio-demographic factors and health education significantly influenced adherence. Strengthening antenatal counseling, family engagement, and workplace support can enhance breastfeeding outcomes and contribute to improved child health.

Keywords: Breastfeeding, Exclusive Breastfeeding, Maternal Education, Socio-Demographic Factors, Colostrum.

Introduction

Breastfeeding is universally acknowledged as the most effective and natural means of providing optimal nutrition to infants, laying the foundation for lifelong health and development. The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend exclusive breastfeeding for the first six months of life, followed by the introduction of complementary foods while continuing breastfeeding up to two years of age or beyond. [1]

Breast milk provides all the essential nutrients, antibodies, hormones, and growth factors required for an infant's physical and cognitive development, while also protecting against infectious diseases and chronic conditions. [2] Despite this, global adherence to optimal breastfeeding practices remains suboptimal, influenced by a complex interplay of socio-demographic, cultural, and health system factors. In developing countries, where the burden of infant morbidity and mortality is disproportionately high, promoting breastfeeding remains one of the most cost-effective interventions for child survival. Breastfed children have a lower risk of diarrhea, pneumonia, obesity, and type 2 diabetes later in life, while mothers benefit from reduced risk of breast and ovarian cancers and improved postpartum recovery. [2, 3]

In India, breastfeeding has deep cultural roots, yet significant gaps persist between knowledge and practice. According to the National Family Health

Survey (NFHS-5, 2019–21), [4] only 63.7% of infants under six months are exclusively breastfed, and early initiation of breastfeeding within one hour of birth occurs in 41.8% of deliveries. These figures highlight the persistence of barriers to optimal feeding practices despite widespread awareness campaigns. Regional disparities are pronounced, with urbanization, maternal employment, and healthcare accessibility influencing breastfeeding behaviors. [5] The presence of prelacteal feeding, delayed initiation, and premature cessation of breastfeeding are common, often stemming from traditional beliefs, lack of support, and inadequate counseling by healthcare providers. [6]

Socio-demographic determinants play a crucial role in shaping breastfeeding practices. Maternal age, education, occupation, socioeconomic status, parity, and place of residence significantly affect initiation and continuation rates. [7] Younger mothers, especially those with limited education or employment outside the home, may lack adequate knowledge or confidence to sustain exclusive breastfeeding. [8] Conversely, higher educational attainment and exposure to health information have been associated with better breastfeeding outcomes. Cultural norms and family influences, particularly from older female relatives, often dictate infant feeding practices in many communities. [9] Moreover, mode of delivery and institutional support are key clinical determinants — mothers undergoing cesarean sections frequently experience delayed initiation due to post-operative discomfort or separation from the infant. [5]

Health system factors also critically determine breastfeeding outcomes. The Baby-Friendly Hospital Initiative (BFHI) launched by WHO and UNICEF emphasizes early initiation, rooming-in, and lactation counseling as essential components of maternal care. Community-level interventions, including mother-to-mother support groups and public awareness campaigns, have shown promising results in improving exclusive breastfeeding rates. [10, 11] Understanding the socio-demographic correlates of breastfeeding is therefore essential for designing targeted interventions. Cross-sectional studies exploring these associations help identify vulnerable groups and modifiable barriers that can be addressed through education, counseling, and supportive policies. With this background, the present study aims to evaluate the prevailing breastfeeding behaviors among mothers and to identify key socio-demographic factors influencing these practices.

Materials and Methods

Study Settings: A cross-sectional descriptive study was conducted at a tertiary care teaching hospital located in North India over a period of 3 months from June to August 2025. The hospital caters to both urban and rural populations, providing an ideal setting for assessing breastfeeding practices across diverse socio-economic backgrounds. The study population comprised of mothers with infants aged 0–12 months who attended the outpatient department (OPD) or immunization clinic during the study period.

Inclusion & Exclusion Criteria

Mothers having infants aged 0 to 12 months and those who provided informed consent to participate were included in the study. However mothers with severe illness or those whose infants had congenital anomalies or chronic illnesses affecting feeding were excluded from the study.

Sampling Technique & Sample Size:

The sample size was calculated using the formula for estimating a single proportion:

$$n = \frac{Z^2_{1-\alpha/2} \times p \times q}{d^2}$$

Where:

- $Z_{1-\alpha/2} = 1.96$ for 95% confidence level
- p = estimated prevalence of exclusive breastfeeding (taken as 64% based on NFHS-5, 2019–21)[4]
- $q = 1 - p$
- d = absolute precision (5%)

Considering a 10% non-response rate, the final sample size was rounded to 390 mothers**.** A simple random sampling method was employed.

Mothers visiting the immunization clinic during the data collection period were selected randomly until the required sample size was achieved.

Data Collection Tools:

Data was collected using a pre-tested, semi-structured questionnaire having following sections:

- **Section A:** Socio-demographic information – age, education, occupation, religion, socioeconomic status (as per Modified Kuppuswamy scale), parity, and family type.
- **Section B:** Obstetric and delivery details – mode of delivery, place of delivery, antenatal care, and counseling received.
- **Section C:** Breastfeeding practices – initiation time, exclusivity, duration, introduction of complementary feeding, and use of prelacteal feeds.
- **Section D:** Knowledge and attitudes regarding breastfeeding.

Data collection was conducted through face-to-face interviews with eligible mothers after obtaining informed consent. The information provided was cross-verified with infant health cards wherever possible (for birth dates and immunization details).

Operational Definitions

- **Exclusive Breastfeeding:** Feeding only breast milk (including expressed milk), with no other liquids or solids except for medicines or vitamin drops, for the first six months of life (WHO, 2023).
- **Early Initiation:** Commencement of breastfeeding within one hour of birth.
- **Prelacteal Feeding:** Giving any food or liquid other than breast milk to a newborn before initiating breastfeeding.
- **Complementary Feeding:** Introduction of solid or semi-solid food in addition to breast milk after six months of age.

Data Analysis: Collected data were entered into Microsoft Excel and analyzed using SPSS Statistics version 22.0.

Descriptive statistics such as mean, standard deviation, frequency, and percentages were used to summarize socio-demographic data and breastfeeding indicators. A p-value < 0.05 was considered statistically significant.

Results

Table 1: Socio-Demographic Profile of the Mothers (n = 390)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	≤20	52	13.3
	21–30	268	68.7
	>30	70	18.0
Residence	Urban	228	58.5
	Rural	162	41.5
Education	Illiterate/Primary	64	16.4
	Secondary	166	42.6
	Graduate and above	160	41.0
Occupation	Homemaker	276	70.8
	Working	114	29.2
Socioeconomic Status (Kuppuswamy scale)	Upper	36	9.2
	Upper-middle	110	28.2
	Lower-middle	154	39.5
	Upper-lower	90	23.1
Type of Family	Nuclear	230	59.0
	Joint	160	41.0
Parity	Primipara	216	55.4
	Multipara	174	44.6

A total of 390 mothers participated in the study. The mean age of mothers was 26.8 ± 4.9 years (range 18–40 years). Most participants were in the age group 21–30 years (68.7%). A majority belonged to the Hindu religion (82.8%), and 58.5% resided in urban areas.

Table 2: Obstetric and Delivery Details of the Mothers (n = 390)

Variable	Category	Frequency (n)	Percentage (%)
Place of Delivery	Institutional	360	92.3
	Home	30	7.7
Mode of Delivery	Normal vaginal	276	70.8
	Cesarean section	114	29.2
Antenatal Counseling on Breastfeeding	Received	268	68.7
	Not received	122	31.3

Around 68.7% of mothers received antenatal counseling on breastfeeding.

Table 3: Breastfeeding Practices among Mothers (n = 390)

Practice	Category	Frequency (n)	Percentage (%)
Initiation of Breastfeeding	Within 1 hour	226	57.9
	After 1 hour	164	42.1
Prelacteal Feeding	Given	118	30.3
	Not given	272	69.7
Colostrum Feeding	Given	340	87.2
	Discarded	50	12.8
Exclusive Breastfeeding (up to 6 months)	Practiced	252	64.6
	Not practiced	138	35.4
Introduction of Complementary Feeding	At 6 months	268	68.7
	Before 6 months	70	17.9
	After 6 months	52	13.4

Out of 390 mothers, 314 (80.5%) initiated breastfeeding within 24 hours of delivery, while only 226 (57.9%) initiated within one hour of birth. Exclusive breastfeeding up to six months was practiced by 252 mothers (64.6%), and prelacteal feeds were given by 118 mothers (30.3%).

Table 4: Association between Socio-Demographic Factors and Exclusive Breastfeeding (n = 390)

Variable	Category	Exclusive BF n (%)	Non-exclusive BF n (%)	χ^2 value	p-value
Maternal Age (years)	≤20	32 (61.5)	20 (38.5)	1.21	0.548
	21–30	178 (66.4)	90 (33.6)		
	>30	42 (60.0)	28 (40.0)		
Education	Illiterate/Primary	30 (46.9)	34 (53.1)	12.75	***0.002****
	Secondary	104 (62.7)	62 (37.3)		
	Graduate & above	118 (73.8)	42 (26.2)		
Occupation	Homemaker	194 (70.3)	82 (29.7)	9.84	***0.007****
	Working	58 (50.9)	56 (49.1)		
Socioeconomic Status	Upper/Upper-middle	86 (65.6)	45 (34.4)	0.41	0.814
	Lower/Lower-middle	166 (63.8)	94 (36.2)		

A statistically significant association was observed between maternal education, occupation, and exclusive breastfeeding. Mothers with higher education and homemakers were more likely to practice exclusive breastfeeding ($p < 0.05$).No significant association was found with age or socioeconomic status.

Table 5: Association between Obstetric Factors and Early Initiation of Breastfeeding

Variable	Category	Early Initiation n (%)	Delayed Initiation n (%)	χ^2 value	p-value
Mode of Delivery	Normal vaginal	198 (71.7)	78 (28.3)	18.95	***<0.001****
	Cesarean	28 (24.6)	86 (75.4)		
Antenatal Counseling	Received	190 (70.9)	78 (29.1)	16.82	***<0.001****
	Not received	36 (29.5)	86 (70.5)		

Early initiation of breastfeeding (<1 hour) was significantly higher among mothers who delivered vaginally and those who received antenatal counseling ($p < 0.01$).

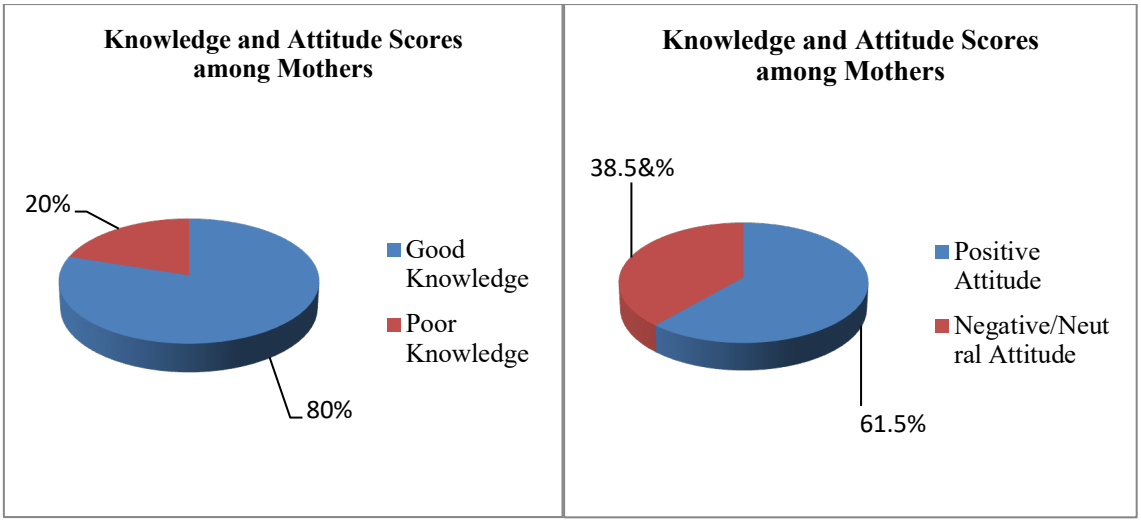

Figure 1: Knowledge and Attitude toward Breastfeeding

Out of 390 mothers, 312 (80%) had good knowledge regarding the benefits of breastfeeding, while only 240 (61.5%) exhibited a positive attitude toward exclusive breastfeeding for six months.

Discussion

In the current study, early initiation of breastfeeding within one hour of birth was reported by 57.9% of mothers, which, though encouraging, indicates scope for improvement. This finding aligns closely with the National Family Health Survey (NFHS-5) report, which documented early initiation in 41.8% of Indian mothers (NFHS-5, 2019–21). [4] A similar prevalence was observed in studies from Tamil Nadu (56.7%) (Kavitha et al., 2021) [12] and Bangladesh (60%) (Rahman et al., 2020). [13] Early initiation is crucial for neonatal survival and bonding, yet cultural barriers, delayed delivery-room practices, and cesarean births often impede timely breastfeeding. In the present study, mothers who delivered vaginally were more likely to initiate breastfeeding early, consistent with findings by Khan et al. (2021) [14] who observed delayed initiation among cesarean-delivered mothers.

The prevalence of exclusive breastfeeding (EBF) up to 6 months was 64.6%, which is higher than the NFHS-5 national average of 63.7%, indicating relatively satisfactory adherence. [4] Similar EBF rates were reported in Maharashtra (66.2%) (Patel et al., 2020) [15] and Nepal (65.8%) (Subedi et al., 2021). [16] However, the global EBF rate stands at only 44% according to WHO (2023), [1] demonstrating that the present study population performs better than global averages. Mothers with higher education and those who received antenatal counseling exhibited better exclusive breastfeeding practices. These findings underscore the role of maternal education in promoting optimal infant feeding, corroborating results from studies in Ethiopia (Tsegaye et al., 2019) and Nigeria (Adebayo et al., 2020), [17] where literacy and awareness significantly influenced EBF adherence.

The practice of giving colostrum was reported by 87.2% of mothers, a highly positive finding reflecting growing awareness about colostrum's immunological and nutritional benefits. This rate is higher than that observed in NFHS-5 (70%) and similar to findings from a tertiary hospital in Delhi (85%) (Gupta et al., 2021). [18] Conversely, prelacteal feeding—a harmful traditional practice—was observed in 30.3% of participants, mostly among mothers with lower education and rural backgrounds. Comparable studies in Uttar Pradesh (Pandey et al., 2020) [19] reported prelacteal feeding rates between 25–40%, indicating persistence of this cultural norm despite health education efforts. Religious rituals, advice from elders, and misconceptions about milk insufficiency were major determinants identified through participant feedback. Such beliefs need targeted community-level interventions.

Socio-demographic analysis revealed that mothers aged 20–30 years, those with secondary or higher education, and women from nuclear families practiced exclusive breastfeeding more consistently than their older or less educated counterparts. These findings mirror those of Kumar et al. (2019) [6] and Ogbo et al. (2018), [20] who reported that younger, educated mothers are more responsive to health education messages and adopt recommended feeding practices more readily. Employment status also influenced breastfeeding behavior—working mothers often discontinued exclusive breastfeeding earlier due to time constraints and inadequate workplace support.

The knowledge and attitude assessment revealed that 80% of mothers had good knowledge and

61.5% exhibited a positive attitude toward breastfeeding. However, the gap between knowledge and actual practice indicates that awareness alone is insufficient for behavioral change. This discrepancy parallels findings from studies by Goyal et al. (2021) [21] in Rajasthan, where high knowledge levels did not always translate to consistent exclusive breastfeeding. Reinforcement through continuous counseling and family support, especially from spouses and mothers-in-law, is essential for sustaining favorable practices.

Health system support plays a crucial role. Mothers who received antenatal or postnatal counseling from healthcare providers were more likely to initiate and sustain breastfeeding. The Baby-Friendly Hospital Initiative (BFHI) by WHO and UNICEF recommends such counseling as a standard practice. Similar observations were reported in studies from Kerala (Sreekumar et al., 2021) [22] where structured hospital-based interventions significantly improved early initiation and EBF rates. In contrast, lack of follow-up and post-discharge support contributed to early cessation in several participants in the present study.

The study also highlights that cultural beliefs and family influence remain significant determinants of infant feeding behavior. Grandmothers and older female relatives often influenced early feeding decisions, consistent with findings from Sinha et al. (2020)7 and Hajeebhoy et al. (2019), [23] emphasizing the importance of involving family members in educational interventions.

Recommendations

1. **Strengthen Health Education:** Regular antenatal and postnatal counseling sessions should emphasize early initiation, exclusive breastfeeding, and avoidance of prelacteal feeds.
2. **Community and Family Involvement:** Engage husbands, grandmothers, and community elders in breastfeeding awareness programs to reduce cultural barriers and promote family support.
3. **Capacity Building of Healthcare Providers:** Training nurses and midwives under the Baby-Friendly Hospital Initiative (BFHI) can enhance breastfeeding counseling and follow-up care.
4. **Mass Media Campaigns:** Use local media and digital platforms to disseminate culturally tailored messages promoting breastfeeding benefits and dispelling myths.

Limitations

1. **Hospital-Based Study:** The findings may not be fully generalizable to the broader community, as hospital attendees may have higher health awareness.
2. **Self-Reported Data:** Recall bias could have influenced responses regarding exclusive breastfeeding duration and timing of initiation.
3. **Cross-Sectional Design:** The study captures practices at a single point in time, limiting causal inference between variables.
4. **Sociocultural Variability:** The study did not comprehensively assess cultural beliefs or family influences that may affect breastfeeding behavior.

Conclusion

The study revealed that breastfeeding practices among mothers were satisfactory but require further improvement.

Early initiation within one hour of birth was achieved by 57.9% and exclusive breastfeeding up to six months by 64.6% of mothers, reflecting moderate compliance with WHO recommendations. Maternal education, antenatal counseling, and family structure significantly influenced breastfeeding behavior.

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